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IMPORTANT INSECT OUTBREAKS IN OREGON AND WASHINGTON IN 1964

by

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SUMMARY

Destructive forest insect outbreaks occurred on 1,116,130 acres of forest land in Oregon and Washington. The location of the major outbreaks is shown on the attached map.

The total infested acreage this year was the lowest it has been during the past decade, as shown below.

Year	Infested acreage	Year	Infested acreage
1955	2,248,820	1960	1,272,960
1956	1,410,660	1961	1,223,230
1957	2,129,440	1962	1,305,170
1958	2,032,720	1963	1,311,080
1959	1,448,360	1964	1,116,130

Outbreaks of defoliating insects increased region-wide while the areas infested by bark beetles and sucking insects decreased. The majority of this year's infested acreage was due to various bark beetle outbreaks.

Unless the Douglas-fir tussock moth populations in eastern Oregon are brought under control by natural factors this fall and next spring, control operations will be necessary to save timber early next summer.

All known infestations of the European pine shoot moth, outside the containment zone in western Washington, have been eradicated. Three years' negative survey findings in Spokane indicate that the original eradication project was successful. Spokane can now be considered "clean." Within the zone, the moth has become well established in several new communities. In Oregon, eradication of the shoot moth continued in the Portland area. Several infested trees were found in one local area of Portland.

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Summary of 1964 forest insect epidemic infestations in Oregon and Washington

Insects 1/	Oregon		Washington		Regional total	
	Infestation centers	Area	Infestation centers	Area	Infestation centers	Area
	Number	Acres	Number	Acres	Number	Acres
Defoliators:						
Larch casebearer	0	0	63	112,920	63	112,920
Douglas-fir tussock moth	9	40,320	72	17,700	81	58,020
Noctuid moth (Douglas-fir)	2	8,440	0	0	2	8,440
Western oak looper	22	6,430	0	0	22	6,430
Needle miner (lodgepole pine)	2	2,800	0	0	2	2,800
Spruce budworm	0	0	3	2,790	3	2,790
Unknown sawfly (larch)	3	2,680	0	0	3	2,680
All defoliators	38	60,670	138	133,410	176	194,080
Sucking insects:						
Balsam woolly aphid	327	148,040	74	31,430	401	179,470
All sucking insects	327	148,040	74	31,430	401	179,470
Bark Beetles:						
Mountain pine beetle (W)	267	92,700	401	165,470	668	258,170
Mountain pine beetle (L)	175	55,780	14	7,080	189	62,860
Mountain pine beetle (P)	147	42,420	40	13,670	187	56,090
Mountain pine beetle (S)	12	6,160	0	0	12	6,160
Fir engraver	348	120,820	73	15,130	421	135,950
Western pine beetle	327	111,310	69	21,950	396	133,260
Douglas-fir beetle	319	57,100	122	18,110	441	75,210
Oregon pine ips	62	7,370	24	2,080	86	9,450
Engelmann spruce beetle	27	3,600	6	600	33	4,200
Silver fir beetles	0	0	6	1,230	6	1,230
All bark beetles	1,684	497,260	755	245,320	2,439	742,580
All insects	2,049	705,970	967	410,160	3,016	1,116,130

1/ Mountain pine beetle infestations are separated by tree species: W, western white pine; L, lodgepole pine; P, ponderosa pine; S, sugar pine.

The only chemical control against bark beetles was a small maintenance project against the mountain pine beetle in the lodgepole pine stands of Crater Lake National Park.

Defoliators, sucking insects, and bark beetle outbreaks are discussed in the following sections. Individual insect infestations are listed in order of size and not necessarily by current or future importance of the insect.

DEFOLIATORS

LARCH CASEBEARER (Coleophora laricella (Hübner)):

Host this year: Western larch.

Current conditions: Larch casebearer infestations in northeastern Washington increased in size and severity. Defoliation ranged from light to extreme, but as yet no tree mortality has been recorded. Heaviest outbreak centers were located on the Kaniksu and Colville National Forests and on the Northeast Washington District of the Washington State Department of Natural Resources.

Subepidemic outbreaks were widespread in northeastern Washington from the Idaho line westward to Deer Park.

Trend: Apparently upward.

Control: No control is needed in 1965.

DOUGLAS-FIR TUSSOCK MOTH (Hemerocampa pseudotsugata McD.):

Hosts this year: Douglas-fir, true firs, and intermingled conifers.

Current conditions: Infestations ranged in size from a few trees to several hundred acres on the Northeast Washington District (WSDNR) and areas adjacent to the Colville National Forest. Many of the infestations were in farm woodlots or other isolated stands.

In Oregon, serious outbreaks developed in continuous forest stands on the Malheur and Ochoco National Forests. Here, some tree killing has occurred and more is imminent.

Trend: Generally downward in northeastern Washington but with some localized tree killing possible. In Oregon, an upward trend is expected.

Control: Surveys are being made to determine the need for control in 1965.

NOCTUID MOTH (Xylomyges simplex (Wlk.)):

Hosts this year: Douglas-fir and associated conifers.

Current conditions: An outbreak of this moth occurred on about 8,000 acres on the Siuslaw National Forest in Oregon. Light to moderate defoliation resulted from one season's feeding.

Trend: Unknown. An evaluation survey is now underway.

Control: None needed in 1965.

WESTERN OAK LOOPER (Lambdina fiscellaria somniaria (Hulst)):

Hosts this year: Oregon white oak and Oregon ash.

Current conditions: Outbreaks continued in the Willamette Valley area near Dallas, Sheridan, and Willamina, Oregon. Disease and parasites apparently controlled the outbreaks at the older infestation centers.

Trend: Undetermined. Probably downward.

Control: None needed in 1965. Infestations in individual woodlots and on shade trees can be controlled by aerial application of DDT or other insecticide if desired.

SAWFLY (Neodiprion sp.):

Host this year: Western larch.

Current conditions: All outbreaks occurred in Oregon forests. Small infestations present on the Wallowa-Whitman National Forest last year decreased significantly. One new infestation developed on the White River, Mt. Hood National Forest. In these infestation areas, both mature and immature trees were attacked. Defoliation ranged from light to heavy.

Trend: Undetermined.

Control: No control is needed in 1965. White River, Mt. Hood National Forest, infestation appears to be heavily parasitized.

PINE NEEDLE MINER (probably Recurvaria sp.):

Host this year: Lodgepole pine.

Current conditions: Light to moderate defoliation occurred on the Deschutes National Forest near Wickiup and Crane Prairie Reservoirs.

Trend: Undetermined.

Control: No control is needed in 1965.

SPRUCE BUDWORM (Choristoneura fumiferana (Clem.)):

Hosts this year: Douglas-fir, lowland white fir, subalpine fir, western hemlock, and Engelmann spruce.

Current conditions: The only epidemic outbreak occurred on the Northeast Washington District (WSDNR) and Kaniksu National Forest in northeastern Washington. Defoliation ranged from light to heavy. For the first time since aerial surveys began in 1947 no infestations were seen in Oregon.

Infestations recorded in 1963 and 1964 are as follows:

Administrative area	1963		1964	
	Area	Percent	Area	Percent
	Acres		Acres	
Oregon:				
Fremont National Forest	37,040	62.6	0	0
Wallowa-Whitman NF	12,000	20.2	0	0
Oregon areas	49,040	82.8	0	0
Washington:				
NE Washington (WSDNR)	0	0	742	26.6
Kaniksu National Forest	10,200	17.2	2,048	73.4
Washington areas	10,200	17.2	2,790	100.0
All areas	59,240	100.0	2,790	100.0

Trend: No evaluation survey was made this year.

Control: No control action is needed in 1965.

WESTERN HEMLOCK LOOPER (Lambdina fiscellaria lugubrosa Hulst):

Host this year: Western hemlock.

Current conditions: In Washington, no new epidemic outbreaks of the hemlock looper were detected in the areas sprayed last year. Some light larval feeding occurred on areas reserved for experimental work within the boundaries of the 1963 southwest Washington spray project. On these areas some foliage survived this year's feeding. No outbreaks were detected in Oregon.

Trend: Defoliation is likely to decrease in 1965.

Control: No control is needed in 1965.

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana (Schiff.)):

Hosts this year: Mugho and Scotch pines are the preferred hosts. Fifteen species and varieties of pines in ornamental plantings have been attacked in the past.

Current conditions: In Washington, 33 communities outside the containment zone were surveyed. In Oregon, 21 communities were surveyed. No new infestations were found outside the containment zone.

Within the containment zone, spread of the shoot moth has been rapid. Several new infestations were discovered for the first time this year.

Eradication surveys were again made in Spokane, Washington and Portland, Oregon. For the third successive year, no infestations were found at Spokane, indicating a successful eradication program. Spokane is now considered "clean." In Portland, 14 infested pines were found and destroyed.

Trend: Continued spread within the containment zone.

Control: Strict adherence to State and Federal quarantines and use of prescribed fumigation techniques will slow the spread of the moth.

Cooperative research plans are being made to determine if biological control of the shoot moth is feasible using the sterile male approach. This program will be undertaken by the Pacific Northwest Forest and Range Experiment Station and their cooperators.

SUCKING INSECTS

BALSAM WOOLLY APHID (Chermes piceae (Ratz.)):

Hosts this year: Pacific silver fir, subalpine fir, lowland white fir, and Shasta red fir.

Current conditions: The infested acreage increased in Oregon but decreased in Washington. The majority of the damage occurred in subalpine fir stands on the Gifford Pinchot and Snoqualmie National Forests in Washington. In Oregon, the most severe and extensive infestations were centered on the Willamette, Rogue River, Umpqua, and Deschutes National Forests. New infestations developed in the Coast Range near Coquille, Oregon. This is the southernmost extension of balsam woolly aphid outbreaks in the Coast Range.

The aphid is now well established in Crater Lake National Park and the upper Rogue River drainages. Most of the subalpine fir in the Park and adjacent areas is doomed.

Trend: Static to slightly upward in Pacific silver fir and lowland white fir stands west of the Cascade Mountains. Tree killing in subalpine fir stands will probably increase in 1965.

Control: No practical control measures have been developed for use under forest conditions. About all that can be done is to log the infested trees and merchantable trees of declining thrift.

Some limited insecticide tests may be made in 1965. Research on insect predators is being done on a maintenance basis.

BARK BEETLES

MOUNTAIN PINE BEETLE (Dendroctonus monticolae Hopk.):

Hosts this year: Western white pine, lodgepole pine, and ponderosa pine.

Current conditions:

Western white pine: Tree killing increased moderately in Oregon forests and decreased significantly in Washington forests. In Oregon, the majority of the losses occurred on the Wilamette, Mt. Hood, and Umpqua National Forests. In Washington, the heaviest or most extensive losses were centered in Olympic National Park and on the Gifford Pinchot, Wenatchee, Olympic, Snoqualmie, and Kaniksu National Forests.

Lodgepole pine: Infested acreage in this timber type increased slightly in Oregon where the most extensive losses were sustained on the Fremont, Winema, and Deschutes National Forests. A significant decrease in infested acreage was recorded in Washington. The largest outbreaks occurred on the Colville and Okanogan National Forests.

Ponderosa pine: Outbreaks in pole-sized ponderosa pine stands increased significantly in both States. Oregon losses were centered on the National Forests. In Washington, heaviest and most severe losses occurred on the Okanogan, Colville, and Umatilla National Forests and on the Colville Indian Reservation. Every year more and more acres of stagnated stands increase the beetle hazard.

Sugar pine: Mountain pine beetle outbreaks in sugar pine stands increased in southern Oregon. Losses were centered in the Siskiyou mountains and on the Siskiyou National Forest.

Trend: Downward in Washington white pine stands but slightly upward in Oregon forests. Lodgepole pine losses will decrease. The trend in ponderosa pine stands is significantly upward in both States. Sugar pine losses should continue at about the same level next year.

Control: Control is impractical in western white pine in Oregon and Washington. Salvage of infested trees and intermingled green trees is encouraged to reduce beetle populations and salvage timber values. Maintenance control in lodgepole pine stands will probably be done in Crater Lake National Park in 1964 and 1965. Thinning to relieve stand competition and improve tree vigor in stagnated ponderosa pine stands is encouraged in both States.

FIR ENGRAVER (Scolytus ventralis Lec.):

Hosts this year: Lowland white fir, subalpine fir, and white fir.

Current conditions: The infested area in Oregon about doubled while a slight decrease occurred in Washington. Most of the tree killing occurred in immature and decadent true fir stands. In Oregon, the heaviest and most extensive losses occurred on the Fremont, Wallowa-Whitman, Umatilla, and Ochoco National Forests. Epidemic damage was centered on the Umatilla, Wenatchee, and Kaniksu National Forests in Washington.

Trend: Undetermined. Presumably downward.

Control: Logging merchantable infested trees and trees of declining thrift is about all that can be done under forest conditions.

WESTERN PINE BEETLE (Dendroctonus brevicomis Lec.):

Host this year: Ponderosa pine.

Current conditions: Infestations increased in size in Oregon and decreased in Washington. Most outbreaks declined in severity. The majority of this year's mortality occurred on the Malheur, Ochoco, Fremont, Umatilla, and Winema National Forests. Increased single tree and small group killing was common on many eastern Oregon forests. This may be the forerunner of a more serious outbreak next year. In Washington, outbreaks occurred on the Yakima Indian Reservation and on the Okanogan and Wenatchee National Forests. In most pine forests, an increasing number of widespread subepidemic losses was noted, indicating a build-up may be in progress.

Trend: Static to downward in general with some increased mortality in localized areas.

Control: Losses are likely to continue in mature and decadent stands until the high-risk elements are removed. Hence, increased sanitation-salvage logging is needed in these stands.

DOUGLAS-FIR BEETLE (Dendroctonus pseudotsugae Hopk.):

Host this year: Douglas-fir.

Current conditions: Moderate to severe Douglas-fir beetle outbreaks developed on localized areas in the southern Oregon Coast Range extending from the Alsea River southward to the Umpqua River drainages, and eastward to the Willamette Valley. In this area attacked groups ranged in size from a few trees to about 100. South of the Umpqua River drainages, scattered small groups and single trees were fairly common. This type of loss occurred southward to the California line. Douglas-fir beetle losses increased slightly in the Cascades.

Heavy losses in eastern Oregon were centered on the Wallowa-Whitman and Umatilla National Forests.

In Washington, outbreaks decreased. Remaining damage centers were located on the Okanogan, Colville and Umatilla National Forests, and on the Colville Indian Reservation. Only minor infestations occurred in western Washington.

Trend: In western Oregon, losses will probably increase moderately, with some heavy to very heavy losses locally. Eastern Oregon losses are likely to increase. Continued low level tree killing is forecast for Washington.

Control: Stepped-up salvage of infested trees and adjacent windthrow is essential in both eastern and western Oregon to reduce beetle populations.

OREGON PINE IPS (Ips oregonis (Eichh.)):

Host this year: Ponderosa pine.

Current conditions: Tree killing in young ponderosa pine stands decreased significantly in Oregon but remained static in Washington. The largest remaining infestations were centered on the Malheur, Winema, and Mt. Hood National Forests in Oregon and on the Colville Indian Reservation, Glenwood District (WSDNR), and Colville National Forest in Washington. Most of the infestations occurred on the drier fringe-type sites.

Trend: Downward in both States.

Control: None is needed in 1965. Good silvicultural practices usually preclude the need for direct control measures.

ENGELMANN SPRUCE BEETLE (Dendroctonus engelmanni Hopk.):

Host this year: Engelmann spruce.

Current conditions: Infestations of the Engelmann spruce beetle declined significantly in both States. The few remaining damage centers were located in inaccessible areas on the Wallowa-Whitman and Umatilla National Forests in Oregon and on the Okanogan and Umatilla National Forests in Washington.

Trend: Undetermined, but presumably downward.

Control: In accessible stands, infested trees should be logged to reduce beetle populations and save timber values. Windthrown spruce serves as breeding sites and should be salvaged whenever feasible.

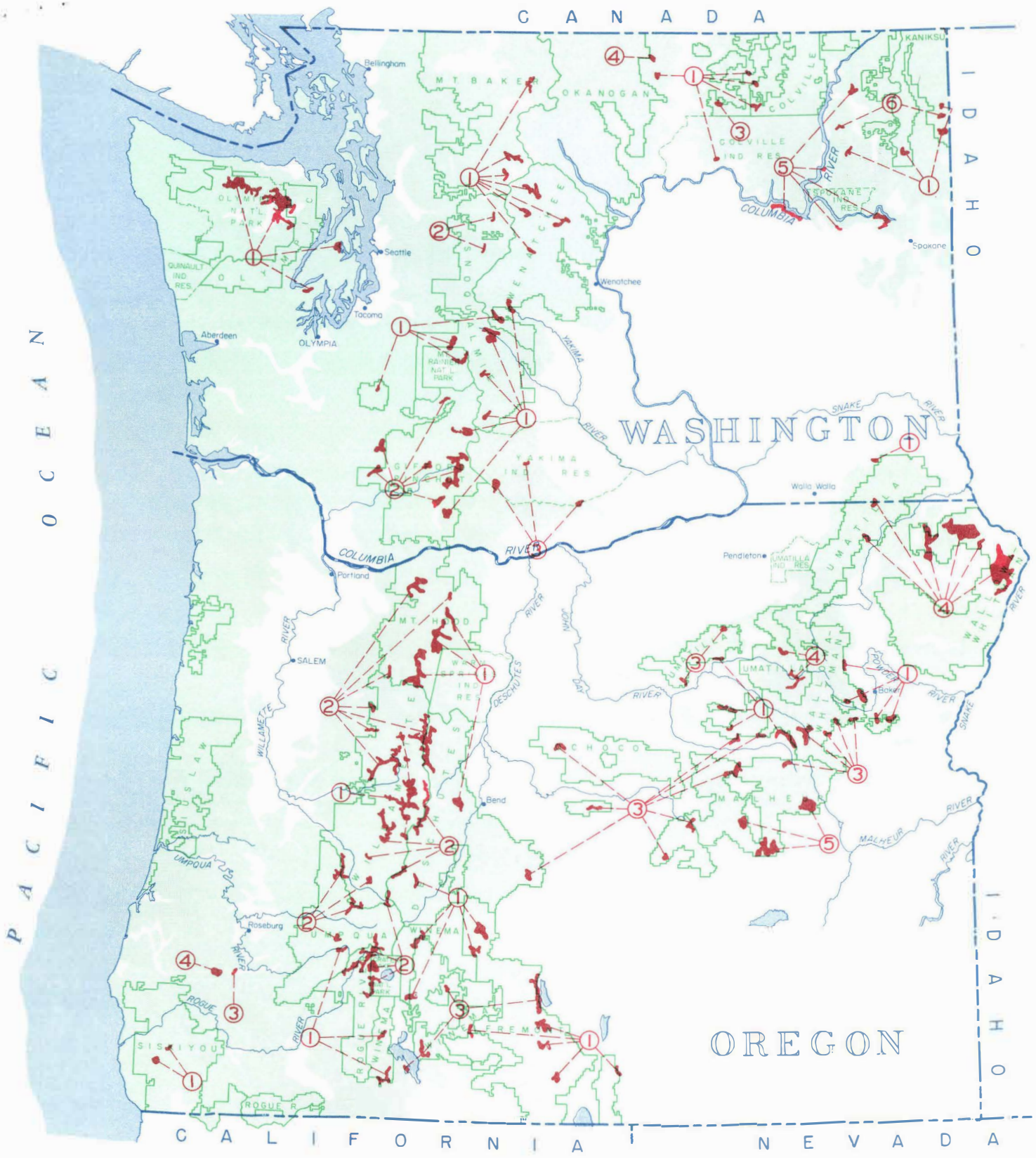
SILVER FIR BEETLES (Pseudohylesinus spp.):

Host this year: Pacific silver fir.

Current conditions: Tree killing by the silver fir beetles declined to a very low level. Infestations were centered on the Mt. Baker and Snoqualmie National Forests and in Olympic National Park in Washington. Subepidemic tree mortality was common in northwestern Washington forests.

Trend: Downward.

Control: Logging of the infested trees is the only control needed in 1965 to reduce beetle populations and save timber values.



LEGEND

Forested Areas

National Forest Boundaries

Reservation and Park Boundaries

U.S. FOREST SERVICE
PORTLAND, OREGON

MAJOR FOREST INSECT OUTBREAKS
1964

1. Mountain Pine Beetle
2. Balsam Wooly Aphid
3. Western Pine Beetle
4. Douglas-fir Beetle
5. Douglas-fir Tussock Moth
6. Spruce Budworm